

### IN THE CLAIMS

Prior to taking up the above-identified patent application for examination, please amend the claims as shown in the following detailed claim listing. The detailed claim listing is intended to reflect the cancellation of claims 1-3 and 7-32, the amendment of claims 4-6, and the addition of new claims 33-45.

The specific amendments to individual claims are detailed in the following marked-up set of claims.

Claims 1-3. (Canceled)

4. (Currently Amended) An integrated circuit (IC) burn-in system comprising:  
a computer system comprising a processor operating under the control of a computer program; and  
at least one IC comprising:  
interface circuitry to interface the at least one IC to the computer system; and  
a thermal sense circuit, coupled to the interface circuitry, to provide a temperature indication that is proportional to the junction temperature of the at least one IC.

5. (Currently Amended) The IC burn-in system recited in claim 4, wherein the computer system is to compare ~~compares~~ the temperature indication with a temperature value determined by the computer program;

wherein if the temperature indication substantially matches the temperature value, the computer system is to bin [[bins]] the at least one IC at that temperature value; and

wherein if the temperature indication is less than the temperature value, the computer system is to decrement ~~decrements~~ the temperature value and compare ~~compares~~ the temperature indication with the decremented temperature value.

6. (Currently Amended) The IC burn-in system recited in claim 4, wherein the at least one IC further comprises:

logic circuitry coupled to the interface circuitry; and

wherein the logic circuitry is to be responsive to the temperature indication generated by the thermal sense circuit;

wherein the logic circuit is also to be responsive to a temperature value generated by the computer system as determined by the computer program;

wherein the logic circuitry is to compare compares the temperature indication with the temperature value;

wherein if the temperature indication substantially matches the temperature value, the logic circuitry is to generate generates a first indication to the computer system, and the computer system is to bin [[bins]] the at least one IC at that temperature value; and

wherein if the temperature indication is less than the temperature value, the logic circuitry is to generate generates a second indication to the computer system, and the computer system is to decrement decrements the temperature value and compare compares the temperature indication with the decremented temperature value.

Claims 7-32 (Canceled)

33. (New) The IC burn-in system recited in claim 5, wherein the interface circuitry is to receive the temperature value from the computer system and to send the temperature indication to the computer.

34. (New) The IC burn-in system recited in claim 33, wherein the at least one IC further comprises a storage circuit coupled to the interface circuitry to store the temperature value.

35. (New) An integrated circuit (IC) burn-in system comprising:  
a computer system comprising a processor; and  
an IC comprising:  
    interface circuitry to interface the IC to the computer system; and  
    a thermal sense circuit, coupled to the interface circuitry, to provide a temperature indication that is proportional to the junction temperature of the IC.

36. (New) The IC burn-in system recited in claim 35, wherein the computer system is to compare the temperature indication with a temperature value;  
    wherein if the temperature indication substantially matches the temperature value, the computer system is to bin the IC at that temperature value; and  
    wherein if the temperature indication is less than the temperature value, the computer system is to decrement the temperature value and compare the temperature indication with the decremented temperature value.

37. (New) The IC burn-in system recited in claim 35, wherein the IC further comprises:  
logic circuitry coupled to the interface circuitry; and  
    wherein the logic circuitry is to be responsive to the temperature indication generated by the thermal sense circuit;  
    wherein the logic circuit is also to be responsive to a temperature value generated by the computer system;  
    wherein the logic circuitry is to compare the temperature indication with the temperature value;  
    wherein if the temperature indication substantially matches the temperature value, the logic circuitry is to generate a first indication to the computer system, and the computer system is to bin the IC at that temperature value; and  
    wherein if the temperature indication is less than the temperature value, the logic circuitry is to generate a second indication to the computer system, and the computer system is to decrement the temperature value and compare the temperature indication with the decremented temperature value.

38. (New) The IC burn-in system recited in claim 36, wherein the interface circuitry is to receive the temperature value from the burn-in system and to send the temperature indication to the burn-in system.

39. (New) The IC burn-in system recited in claim 38, wherein the IC further comprises a storage circuit coupled to the interface circuitry to store the temperature value.

40. (New) A burn-in system for an IC comprising a thermal sense circuit, the burn-in system comprising:

a fixture to electrically couple to the IC; and

a data processing system coupled to the fixture, the data processing system to execute a computer program, the computer program to operate the burn-in system to characterize the IC and comprising the operations of:

storing a temperature value for the IC;

determining whether a temperature indication from the thermal sense circuit substantially matches the temperature value;

if so, recording the temperature value; and

if not, changing the temperature value to a new temperature value and determining whether the temperature indication matches the new temperature value.

41. (New) The burn-in system recited in claim 40, wherein the computer program to operate the burn-in system further comprises the operations of:

determining whether the temperature indication matches the new temperature value;

if so, recording the new temperature value;

otherwise, repeatedly changing the temperature value and comparing the temperature indication with the changed temperature value, until the temperature indication matches the changed temperature value; and

recording the changed temperature value.

42. (New) The burn-in system recited in claim 40, wherein the temperature value is to be stored in a storage circuit in the IC.

43. (New) The burn-in system recited in claim 40, wherein the temperature value is to be stored in a storage element in the data processing system.

44. (New) The burn-in system recited in claim 40, wherein the IC further comprises an interface circuit to interface the IC to the fixture.

45. (New) The burn-in system recited in claim 40, wherein the temperature indication from the thermal sense circuit is proportional to the junction temperature of the IC.